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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/275,766 | 03/25/1999 | JOHN CHRISTIAN HERMANSEN | 20837-007 | 1175 |

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| EXAMINER |
|---|
| HWANG, JOON H |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2172 | 27 |

DATE MAILED: 09/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| | Application No. | Applicant(s) |
|---|---|---|
| **Office Action Summary** | 09/275,766 | HERMANSEN ET AL. |
| | Examiner | Art Unit |
| | Joon H. Hwang | 2172 |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)☒ Responsive to communication(s) filed on <u>23 June 2003</u> .

2a)☐ This action is **FINAL.**    2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)☒ Claim(s) *1-6,13-19 and 21-30* is/are pending in the application.

    4a) Of the above claim(s) *7-12 and 20* is/are ~~withdrawn from consideration.~~ *Canceled*

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,13-19 and 21-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

## Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____ .

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
           application from the International Bureau (PCT Rule 17.2(a)).

  * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

## DETAILED ACTION

1.      The applicants amended claims 1-6, 13, and 16-19, canceled claims 7-12 and 20

without prejudice, and added new claims 21-30 in the amendment received on 6/23/03.

The pending claims are 1-6, 13-19, and 21-30.


### *Requirement for Information*

2.      Applicant and the assignee of this application are required under 37 CFR 1.105

to provide the following information that the examiner has determined is reasonably

necessary to the examination of this application.

The information is required to enter in the record the art suggested by the

applicant as relevant to this examination in the specification, lines 11-17 on page 5,

about a known software program PC-NAS.

In responding to those requirements that require copies of documents, where the

document is a bound text or a single article over 50 pages, the requirement may be met

by providing copies of those pages that provide the particular subject matter indicated in

the requirement, or where such subject matter is not indicated, the subject matter found

in applicant's disclosure.

The fee and certification requirements of 37 CFR 1.97 are waived for those

documents submitted in reply to this requirement. This waiver extends only to those

documents within the scope of this requirement under 37 CFR 1.105 that are included in

the applicant's first complete communication responding to this requirement. Any

supplemental replies subsequent to the first communication responding to this

requirement and any information disclosures beyond the scope of this requirement

under 37 CFR 1.105 are subject to the fee and certification requirements of 37 CFR

1.97.

The applicant is reminded that the reply to this requirement must be made with

candor and good faith under 37 CFR 1.56. Where the applicant does not have or

cannot readily obtain an item of required information, a statement that the item is

unknown or cannot be readily obtained will be accepted as a complete reply to the

requirement for that item.

This requirement is an attachment of the enclosed Office action. A complete

reply to the enclosed Office action must include a complete reply to this requirement.

The time period for reply to this requirement coincides with the time period for reply to

the enclosed Office action.

### *Claim Rejections - 35 USC § 103*

3.      The text of those sections of Title 35, U.S. Code not included in this action can

be found in a prior Office action.

4.      Claims 1-6, 13-18, and 21-30 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Oshika et al. ("Improved Retrieval Of Foreign Names From Large

Database", 1998, IEEE, pages 480-487) in view of Hermansen ("Automatic Name

Searching in Large Data Bases of International Names," 1985, also described in lines 6-

10 on page 5 in the specification).

With respect to claim 1, Oshika discloses obtaining test data representing a first

proper name (a query name) and a second proper name (a record name in a database)

(section 1.0 on page 480 and section 2.0 on pages 480-481). Oshika discloses

classifying the text data representing said first proper name into one or more

predetermined classifications (section 1.0 on page 480 and section 3.0 on page 481).

Oshika discloses converting the text data representing said first proper name to one or

more representations of said first proper name in a phonetic alphabet using rules

associated with said one or more predetermined classifications (section 1.0 on page

480, section 3.0 on page 481, section 4.0 on page 485, section 5.0 on pages 485-486,

and section 6.0 on page 486). Oshika discloses converting a query name and a record

name from the database into a canonical form in order to find a match between those

names (section 2.0 on pages 480-481). Oshika discloses a search technique that

classifies the language source of the query name then uses the language-specific

rewrite rules for name variants (section 2.0 on pages 480-481) instead of the technique

of the canonical forming. These teach the text data representing the second proper

name could be also converted to at least one predetermined representation in the

phonetic alphabet. Oshika is silent on determining a likelihood of match between the

names. However, Hermansen discloses determining a likelihood of match between the

first proper name and the second proper name (section 3.2 on page 46-50, section 3.3

on pages 52-55, and section 3.4 on pages 55-59). Hermansen discloses producing a

signal indicating said likelihood of match (section 1.1 on pages 4-8 and section 2.1 on

pages 15-16). Therefore, based on Oshika in view of Hermansen, it would have been

obvious to one having ordinary skill in the art at the time the invention was made to

determine a likelihood of match between the names in order to search proper names

effectively.

With respect to claim 2, Oshika discloses obtaining the data representing the first

proper name and the second proper name as a string of characters (section 1.0 on

page 480, section 2.0 on pages 480-481, and section 3.0 on page 481).

With respect to claim 3, Hermansen discloses International Phonetic Alphabet

(section 4.1 on pages 68-71) for transcription. Therefore, based on Oshika in view of

Hermansen, it would have been obvious to one having ordinary skill in the art at the

time the invention was made to utilize IPA for transcription.

With respect to claim 4, Oshika discloses corresponding the predetermined

classifications to one or more ethnic origins of the at least one of the first and second

proper names and performing the comparison according to an algorithm that varies

depending on the corresponding one or more ethnic origins (section 1.0 on page 480,

section 2.0 on pages 480-481, section 3.0 on page 481, section 4.0 on page 485, and

section 5.0 on pages 485-486).

With respect to claim 5, Oshika discloses utilizing different portions of a name for

name searching (section 2.0 on pages 480-481). Hermansen also discloses comparing

at least a portion of name in phonetic alphabet depending on the corresponding ethnic

origins (section 2.1 on pages 15-16, section 3.2 on page 46-50, section 3.3 on page 52-

55, and section 3.4 on page 55-59).

The limitations of claim 6 are rejected in the analysis of claim 5 above, and the claim is rejected on that basis.

With respect to claim 13, Oshika discloses a database including a plurality of proper names and records associated respectively with the proper names representing entities (section 1.0 on page 480 and section 2.0 on pages 480-481). Oshika discloses creating a plurality of phonetic alphabet representations of at least a portion of the proper names (section 3.0 on page 481 and section 4.0 on page 485). Oshika discloses receiving text data representing an input proper name (a query name) as a string of characters (section 2.0 on pages 480-481 and section 3.0 on page 481). Oshika discloses classifying the text data representing the input proper name into one or more predetermined classifications (section 1.0 on page 480 and section 3.0 on page 481). Oshika discloses creating one or more phonetic alphabet representations of the input proper name for each of the predetermined classifications (section 2.0 on pages 480-481, section 3.0 on page 481, section 3.3 on pages 484-485, and section 4.0 on page 485). Oshika is silent on determining a likelihood of match between the names. However, Hermansen discloses determining a likelihood of match between the input proper name and the proper name through a comparison (section 3.2 on page 46-50, section 3.3 on pages 52-55, and section 3.4 on pages 55-59). Hermansen discloses producing a signal indicating said likelihood of match (section 1.1 on pages 4-8, section 2.1 on pages 15-16, section 3.3 on pages 52-55, and section 6.2.3 on page 117) by eliminating matches falling below a predetermined threshold. Therefore, based on Oshika in view of Hermansen, it would have been obvious to one having ordinary skill in

the art at the time the invention was made to determine a likelihood of match between the names in order to search proper names effectively.

With respect to claim 14, Oshika discloses the plurality of proper names consisting a string of characters (section 3.0 on page 481 and section 4.0 on page 485).

With respect to claim 15, Hermansen discloses International Phonetic Alphabet (section 4.1 on pages 68-71) for transcription. Therefore, based on Oshika in view of Hermansen, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize IPA for transcription.

With respect to claim 16, Oshika discloses processing the input proper name to assign one of a set of categories of likely ethnic origin of the input proper name and performing a comparison of the phonetic alphabet representations of the input proper name to the plurality of predetermined pronunciation equivalent representations of the proper names according to an algorithm that varies depending on the predetermined classifications corresponding to a likely ethnic origin (section 1.0 on page 480, section 2.0 on pages 480-481, section 3.0 on page 481, section 3.3 on pages 484-485, section 4.0 on page 485, and section 5.0 on pages 485-486).

With respect to claim 17, Oshika discloses utilizing different portions of a name for name searching (section 2.0 on pages 480-481). Hermansen also discloses comparing at least a portion of name in phonetic alphabet depending on the corresponding ethnic origins (section 2.1 on pages 15-16, section 3.2 on page 46-50, section 3.3 on page 52-55, and section 3.4 on page 55-59).

The limitations of claim 18 are rejected in the analysis of claim 17 above, and the claim is rejected on that basis.

With respect to claim 21, the limitations of claim 21 are similar to the limitations of claim 13. Oshika further discloses utilizing different portions of a name for name searching (section 2.0 on pages 480-481). Therefore, the limitations of claim 21 are rejected in the analysis of claim 13 above, and the claim is rejected on that basis.

The limitations of claim 22 are rejected in the analysis of claim 13 above, and the claim is rejected on that basis.

With respect to claim 23, the limitations of claim 23 are similar to the limitations of claim 13. Oshika further discloses utilizing different portions of a name for name searching (section 2.0 on pages 480-481). Therefore, the limitations of claim 23 are rejected in the analysis of claim 13 above, and the claim is rejected on that basis.

The limitations of claim 24 are rejected in the analysis of claim 15 above, and the claim is rejected on that basis.

With respect to claim 25, Oshika discloses corresponding the predetermined classifications to predetermined cultural classifications (section 3.0 on page 481 and section 3.3 on pages 484-485).

With respect to claim 26, Oshika discloses using an algorithm that varies depending on the predetermined cultural classification for the comparison (section 3.0 on page 481, section 4.0 on page 485, and section 5.0 on pages 485-486).

The limitations of claim 27 are rejected in the analysis of claim 17 above, and the claim is rejected on that basis.

The limitations of claim 28 are rejected in the analysis of claim 18 above, and the claim is rejected on that basis.

With respect to claim 29, Oshika discloses converting a query name and a record name from the database into a canonical form in order to find a match between those names (section 2.0 on pages 480-481). Oshika discloses a search technique that classifies the language source of the query name then uses the language-specific rewrite rules for name variants (section 2.0 on pages 480-481) instead of the technique of the canonical forming. These teach the text data representing the candidate proper name could be also converted to at least one predetermined representation in the phonetic alphabet based on the rules.

With respect to claim 30, the limitations of claim 30 are similar to the limitations of claim 13 above. Oshika further discloses a surname of a proper name (section 2.0 on pages 480-481), which also teaches a given name of the proper name. Hermansen further discloses International Phonetic Alphabet (section 4.1 on pages 68-71) for transcription. Therefore, the limitations of claim 30 are rejected in the analysis of claim 13 above, and the claim is rejected on that basis.


5.     Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hermansen ("Automatic Name Searching in Large Data Bases of International Names," 1985, also described in lines 6-10 on page 5 in the specification).

With respect to claim 19, Hermansen discloses identifying apparent surnames and given names that are part of a string of characters that represent the proper name

(lines 1-18 on page 35, lines 20-23 on page 63, line 1 on page 64, and lines 9-14 on page 80). Hermansen discloses determining the cultural origin or ethnicity of the proper name based on at least one of said apparent surnames or said given names (chapter 4 on pages 68-83). Hermansen discloses selecting a search strategy based on the determined cultural origin or ethnicity of the proper name (lines 7-10 on page 35, lines 16-19 on page 64, lines 18-23 on page 74, and lines 4-8 on page 81). Hermansen discloses selecting a set of names from the database (lines 18-20 on page 20). Hermansen discloses using an algorithm tailored to evaluate which of the selected set of names match the proper name (lines 19-20 on page 35, lines 16-23 on page 45, lines 1-5 on page 54, and lines 8-20 on page 118). Hermansen discloses phonetic alphabet representations for a name (sections 2.5.1 and 2.5.2 on pages 24-30 and section 4.1 and 4.1.1 on pages 68-73). Hermansen is silent on selecting a set of names from the database based on a culture-relevant key-indexing strategy. However, Hermansen discloses a cultural key-indexing element (lines 4-7 on page 7, lines 6-13 on page 19, lines 1-3 on page 22, and lines 1-9 in col. 37). Therefore, based on Hermansen, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select a set of names in the databases based on the determined cultural origin of the input name in order to search matching names efficiently and effectively.
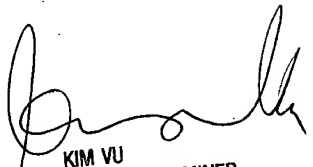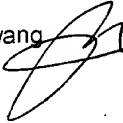

6.       Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joon H. Hwang whose telephone number is 703-305-6469. The examiner can normally be reached on 9:30-6:00(M~F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Y Vu can be reached on 703-305-4393. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Joon Hwang
9/7/03

KIM VU
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